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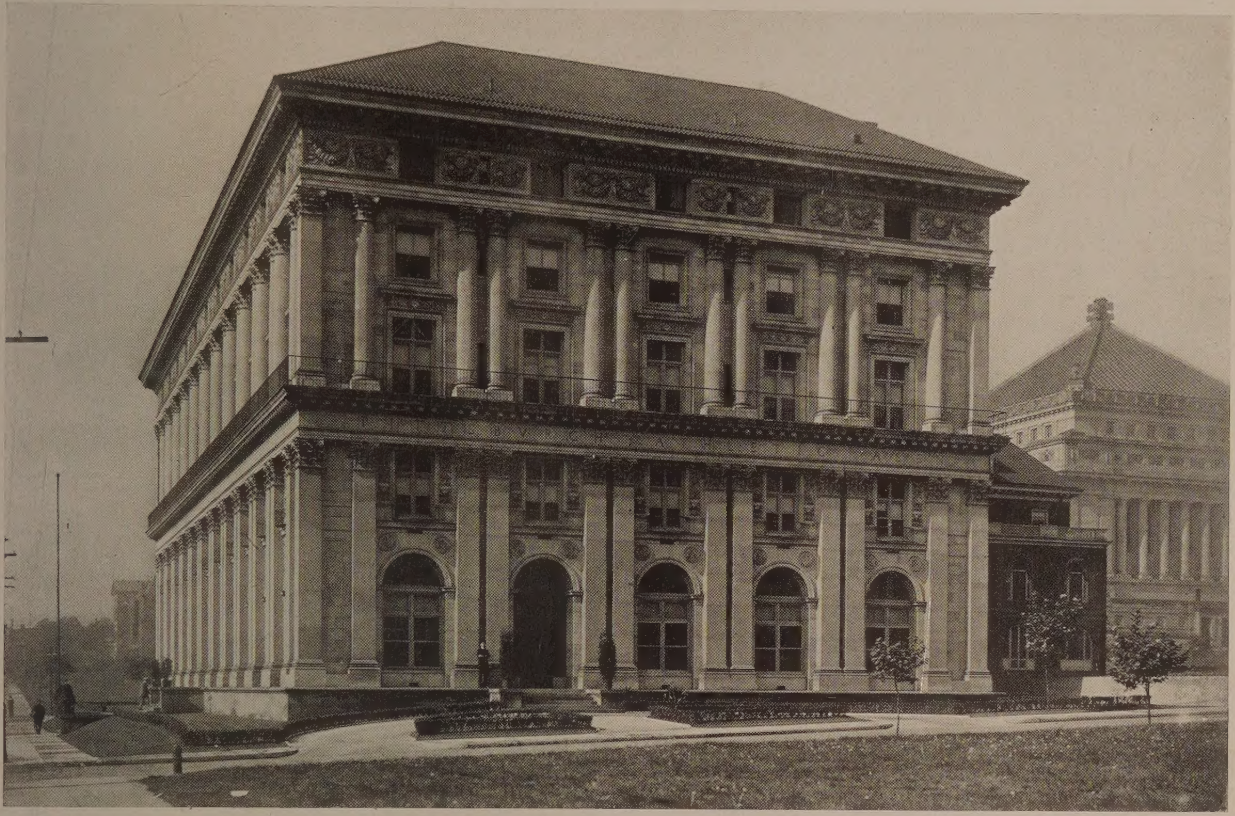


PITTSBURGH ATHLETIC ASSOCIATION CLUB HOUSE. Janssen & Abbott, Architects.

IMPRESSIONS OF THREE CITIES

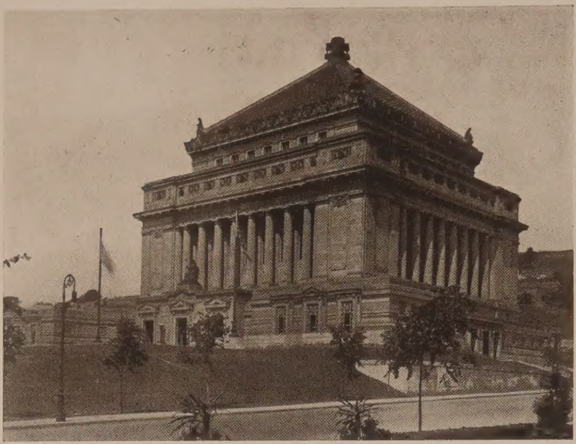
BY AYMAR EMBURY II

III. PITTSBURGH

THE approach to Pittsburgh is at once ugly and fascinating; the train parallels the course of a small river, deep cut between the hills which for the most part rise steeply from the very banks of the stream, but occasionally opens out enough to give space for little manufacturing towns. Wherever this happens, and even in many places where it does not, manufacturing plants and factories have been crowded in between the railroad and the river, or between the railroad and the hills; so that for twenty or thirty miles east of Pittsburgh, the train seems to pass through one continuous manufacturing plant. It is emphatically not a lovely approach, and yet not without a certain grim beauty, the beauty of a battleship, not that of a yacht.

The steel plants, in many cases, look half wrecked; the glass is out, the machinery red with rust engendered by the heat and fumes, many portions of the buildings are roofless, and through the apertures one can see vast uncouth mechanical monsters performing their functions. At night they are a spectacle to be remembered; the glow from the furnaces touches salient angles with scarlet, turns the smoke clouds above to a brilliant orange, and even in the day time their very vastness, and the way they huddle against the raw unverdured hills conveys a feeling of unkempt power like that of some frowsy giant.

Pittsburgh itself gives one something of the same impression; the site presented terrific natural difficulties to the builders of a great city, although offering many advantages for a small one. Situated (as every school boy knows)



SOLDIERS AND SAILORS MEMORIAL, PITTSBURGH.

where the Allegheny and Monongahela Rivers merge and form the Ohio, Pittsburgh inevitably became a great center for water-borne transportation, which at the time it was founded, was the only economical way to handle heavy products. The point of the narrow tongue of land between the Allegheny and the Monongahela Rivers was low and naturally level, but this is the only level part of the city; the rest of the site was composed of steep small hills and deep narrow valleys, following no regular system, but scattered higglety-pigglety over the whole area. I suppose that the Pittsburgh of 1840 covered only the level stretches; but with the sudden and vast development of manufacturing plants, expansion began, and Pittsburgh flung about its residences and its factories wherever standing room could be found, connecting them together with what streets could be built without impossible grades. Around these beginnings the present city has developed, so that of all the American cities there is probably none whose plan is so incoherent on paper, and when actually seen, so difficult to comprehend. Yet, of them all, it is the one most reasonable because it is the least artificial.

Within the parts of the city where the population is densest there are considerable stretches of vacant land too steep and too soft for building purposes, and while a beginning has been made, especially in the outlying portions of the city, to treat these as parking spaces, this attempt has not yet been carried very far, and well paved streets and well built blocks border, or face raw rain-washed hillsides. If I were the City Council of Pittsburgh, the first thing I would do would be to put retaining walls and grass and trees on these steep slopes, treating them perhaps much like the Morningside and Riverside Parks in New York. There are no insuperable difficulties in the way of carrying this out, although many of these sharp hillsides are steeper than Morningside or Riverside Parks, so steep indeed that one wonders why the great clay banks stand up at all.

RODEF SHOLEM SYNAGOGUE, PITTSBURGH.

The business center of the city lies on the site of the old town, and of the main streets Penn Avenue and Liberty Avenue parallel in a general way the Allegheny River, and Third Avenue, Diamond Street, Fifth Avenue and Dover Avenue parallel the Monongahela, and intersect Liberty Avenue diagonally. They are faced by the department stores, the office buildings and the general business buildings of the city, and though this district cannot be said to be very interesting the buildings are of fairly good quality. Many of them are tall, but the effect is, as a whole, even less picturesque than that of New York, because they face so many various angles, and are of so many heights, materials and colors that one feels that there is no logic, order or system in their grouping.

The Union Station faces a small triangular square, and is a rather curious mixture of commonplace office building with a grandiose porte cochere and frontispiece, not exactly bad and by no means good, and this station, although fairly close to the main business district, is without any intimate connection to it. You enter Pittsburgh on the Pennsylvania Railroad, much as you enter New York, a block away in one direction, and seven blocks in the other, from where you really ought to be. One thing about the railroads which has been well handled, is the problem of the tracks; they are elevated through most of the city, but because their builders have been able to place them in part on terraces on the bluffs, and in part to run them through the center of blocks, they have not ruined any streets as completely as the elevated has ruined Third, Sixth and Ninth Avenues in New York. In fact one hardly knows that there are tracks running through the middle of the city unless one happens to run across a well designed stone bridge or steel viaduct over the streets.

APARTMENT HOUSE, PITTSBURGH.

Some of the business buildings are very large indeed, but none of a superlative order of excellence. The Carnegie and Frick Buildings are large and reasonably well designed offices, and the same thing is true of the Oliver Building; the Wabash Station is of ornate and grandoise architecture, suggestive of some of the poorer modern English work, with

A HOUSE NEAR PITTSBURGH.

terrific scale employed in detail: in the lower stories at least, not without a certain agreeable sense of strength. The Kaufmann & Baer department store is an enormous shiny white terra cotta building, filled with windows and probably good for its purpose. The Fort Pitt Hotel is of different character; designed originally as a mercantile building or warehouse, it was transformed into a hotel, and it is plainly evident that its designers (Janssen & Abbott) sought and found a good expression for the solidity and strength of the warehouse, but as a hotel it is rather gloomy and uncheerful. In spite of this fact, it is perhaps the best of the Pittsburgh tall buildings.

Among these big new buildings are a certain number of old ones of superior merit, the residences and offices buildings of old Pittsburgh, some of them built of stone, and some of brick in a quiet and refined Neo-Grec architecture; one of the best of these is the house of the Pittsburgh Club, a quiet dignified old mansion of light colored stone, with a good doorway and agreeable fenestration, but for the most part these old buildings have degenerated into commercial buildings of inferior class, and their presence detracts from, rather than adds to the appearance of the business part of the city.

Leaving the business section, one is taken to a part of the town which has been developed recently as a site for most of the semi-public buildings; what is locally called the Schenley Farms district, lying adjacent to Schenley Park. This section slopes sharply from Allequippa Street to Schenley Park, and can be reached either by ascending and descending a series of hills, finally arriving at Allequippa Street at the top of the district, or by skirting the water front of the Monongahela River and coming out at its base on Forbes or Boundary Street; of the two ways the upper one is to be preferred, because from Allequippa Street, one enjoys an excellent panoramic view of the entire district. This view is an astounding one, for no other area of equal size in any city of the United States includes so many public and semi-public structures of such enormous size and great cost. This assemblage is interesting not only because of the size and character of the buildings, but also because so many of the buildings were done by a single firm, Palmer, Hornbostel & Jones.

A list of the buildings included in the view is worth repeating; they are the Carnegie Library and the Carnegie Institute, the Pittsburgh University, Rodef Sholem Synagogue, Carnegie Technical Schools, the Soldiers' and Sailors' Memorial, the Pittsburgh Athletic Club, the new Masonic Hall, the University Club, the Colonial Club, the Twentieth Century Club, a building for the Historical Society of Western Pennsylvania, Forbes Field, the home of the Pittsburgh National League Club; the Schenley Theatre, the Schenley Hotel, the Catholic Cathedral, the First Congregational Church, the First Baptist Church and the Calvary Church. This formidable list does not include all the important structures in this small section, nor does it give an idea of the many great buildings that are in view, since both the Pittsburgh University and the Carnegie Technical Schools are assemblages of a number of large and elaborate buildings. Especially interesting is the review which it gives of the work of Palmer, Hornbostel & Jones, and this is still more interesting when one recalls the fact that they won them all in open competitions which included many of the most distinguished architects of America. It must be exceedingly gratifying to this firm to have thus assembled so many notable examples of its work, and to feel that their assemblage is due not to personal interest and friendship, but to their ability in design.

Of their buildings those that I found most interesting were the Soldiers' and Sailors' Memorial, and the Rodef Sholem Synagogue, both of them plainly illustrative of their purposes, and of superlative excellence. The Soldiers' and Sailors' Memorial is really far finer in reality than in photograph; an enormous, dominant and impressive structure whose classicism is not that of the books, but exhibits the freedom from formulæ in Mr. Hornbostel's design. The synagogue is one of the most interesting ecclesiastical buildings in this country, and is comparable for originality and fitness to its purpose with its neighbor the First Baptist Church.

The Carnegie Technical Schools are pretty well advanced, and one can now gather an idea of what the group will be when completed. They are, for the most part, serious, workmanlike buildings, not collegiate in character, but workshops of dignified character rather than school houses, a way of looking at the problem that is interesting. The School of Applied Design is somewhat more monumental than the balance of the buildings, and although still incomplete has an unusual and excellent façade, while two of the rooms in it, the music room and a little theatre, are extraordinarily attractive.

The Pittsburgh University group was distinctly a disappointment; the scheme so excellent on paper, can not be appreciated in reality because of the tremendous grade on which the buildings are set, and although the group is per-

BLOCK OF SMALL HOUSES, PITTSBURGH.

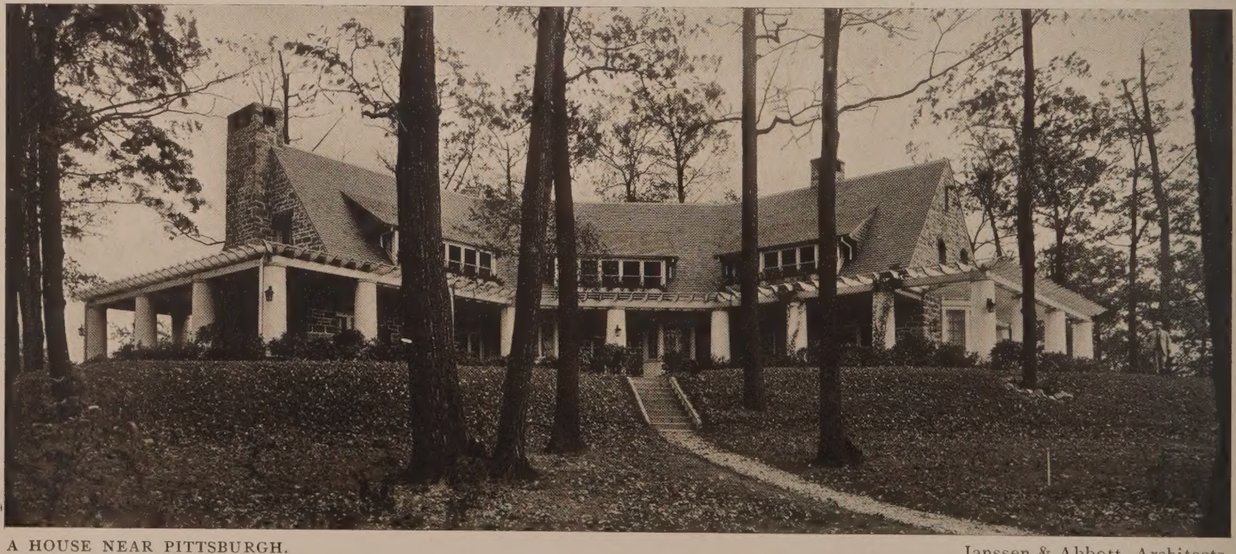
haps not far enough toward completion to indicate the plan very fully, it seems unlikely that its full force and logic will ever become apparent. The individual buildings I do not find especially attractive, perhaps because one expects a classic building to be built on a level base, and the bases of all these buildings are greatly higher at one end than at the other, the variation in some cases being certainly twenty feet.

Next to the work of Palmer, Hornbostel & Jones, that of Janssen & Abbott is the most interesting; beside the two big buildings, the Pittsburgh Athletic Club and the Masonic Temple, the latter now nearing completion, they have a number of small ones, one or two other clubs and several residences. The Pittsburgh Athletic Club is, of course, already familiar through illustration, and I came prepared to admire it, but like many buildings which we know through illustration only, I did not have a very clear idea of the scale, or of the character of the detail. The building is a big one, the scale much larger than one would guess from the illustrations, but the whole thing is so happily proportioned, and the detail so exquisite that the reality is far more admirable than the pictured representation. It occupies a full block front, and the next block to it is covered by the new Masonic Temple, now nearly completed, which, in many ways, is quite as interesting as the Athletic Club, but it should have been held a little more closely in size and scale to its neighbor. Big as the Athletic Club is, it is dominated by the enormous plain surfaces and the great bulk of the new building which is rather comparable in mass with the Soldiers' and Sailors' Memorial, flanking the Athletic Club on the other side; although as the planes of the faces are different they do not constitute a group. There was a great chance in these three buildings to form a magnificent single composition, a chance which has not been improved. This is true, in general, of all the buildings in the Schenley Farms district. Every one realizes how much more attractive our cities could be if some coherent scheme for all great public or semi-public buildings were adhered to, and no better object lesson than this assemblage at Pittsburgh can be found in the United States, because the buildings are all new, have all been located, not with respect to any group plan but as single units on rectangular blocks, and without much regard for common scale or common height levels. This question of scale is here an important one, since so many of the buildings can be seen at the same time, and while the scale has great variations in these buildings, it is for the most part enormous, so that Goodhue's big First Baptist Church looks small and slight by comparison.

This church alone is worth a trip to Pittsburgh, and accustomed as we are to magnificent pieces of design by Mr. Goodhue, there is not one which exhibits his talent to better advantage; there is a finish, a taste and a perfection throughout the building not apparent in any of the colossal structures which surround it, and while it appears slender and delicate, almost to attenuation, by comparison with them, it does not suffer through this cause.

The First Congregational Church is a very excellent little classic building, eminently congregational and ecclesiastic and a very refreshing piece of design as well. Of the Carnegie Library and Institute it would be easy to say too much. It is architecture of a generation ago, and it seems to be excellently planned for its several purposes. Gorgeous rather than beautiful, it reaches its apogee in the foyer. The floor of the foyer is marble, the walls are marble, a row of green marble monolithic columns surround the room, and the capitals of the columns and the ceiling are coated with gold; and in the center sits a golden statue of Andrew Carnegie, smiling a sleek little smile, and looking satisfied and ready for worship. There is something wrong about the spirit in which the Library and Institute have been carried out; one feels the knowledge diffused in this great structure is but secondary to the deference paid to the donor.

Another feature of considerable interest in Pittsburgh is the manner in which the residences have been treated; like other important American cities, Pittsburgh has a very lovely suburb, Sewickley, situated on the river some miles below the town; it is rough country, beautifully forested and adorned with some of the most attractive houses that one could imagine, many of the better ones designed by Janssen & Abbott. There is no single good residence district in the city, but there are a number of different sections which are isolated from less attractive sections by hills and ravines. These have been developed, not with small houses, but into large places, some of them eight or ten acres in size. Many



A HOUSE NEAR PITTSBURGH. Janssen & Abbott, Architects.

of the expensive houses occupy locations on the crests of these hills, from which an extensive view is obtained, or could be obtained, if it were not for the smoke. These houses, although situated within the city limits and surrounded by closely built up sections are distinctly suburban in character, rather than urban, and as many of the streets are bordered by such places, a sort of parking system has gradually developed itself through the courtesy of the property owners, rather than through the efforts of the public. Some attempt is being made by the city to connect the public parks by tree-lined boulevards, and a considerable amount of this work is now in course of construction and rather a small part finished.

Small houses have been in many cases very agreeably done; there are a number of groups of such houses formed of small units, which are picturesque and attractive, and in some parts of the city small houses are set on the top of banks so high above the streets that garages are entered directly from the street level below the house, so that certain streets have the effect of being lined with stucco mausoleums, a thing unique rather than beautiful, although one cannot doubt its practicality.

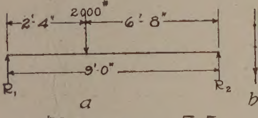
Pittsburgh is impressive if chaotic; one finds nowhere anything approaching a unified and settled scheme, but experiments everywhere, some of the highest value architecturally, and not imitated in the experiments which surround it. It is an unbeautiful city, and probably it is impossible to devise a group plan which would really tie its buildings together, and yet as a whole it is enormously impressive, and is studded with isolated fragments of splendid quality.

X. ENGINEERING FOR ARCHITECTS

BY DEWITT CLINTON POND

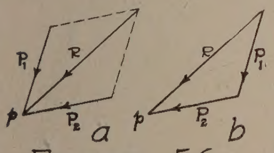
Mr. Pond has charge of the practical course in structural design at Columbia University. He is extremely successful in instructing men who have had little knowledge of mathematics, and these articles have been written with that in view.

A FORCE is completely defined when its magnitude, direction, and point of application are known. In Fig. 55 is a simple beam with a concentrated load upon it. The magnitude of the load is given by the figures,—2,000 pounds,—the direction is indicated by the arrows,—downward—and the location by the dimensions. In this manner the load is entirely defined. There is, however, another method of showing the three elements of a force and that is by means of a straight line. In Fig. 55a the line is shown divided into equal parts. Each part is supposed to represent 1,000 pounds; the total length of the line represents 2,000 pounds. In this manner the length of the line represents the *magnitude* of the force. The arrow shows the direction, and the point p may give the point of application.



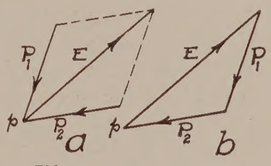
FIGVRE 55

As lines may represent forces, it is possible to use them to determine the action of forces. Two forces acting at a point may be replaced by a single force acting at that point. In Fig. 56 two forces P_1 and P_2, act at the point p. The same effect will be produced if a single load—R—acts at that point. The method of determining R is by means of the "parallelogram of forces." It will be noticed that R is the diagonal of a parallelogram the sides of which are parallel to P_1 and P_2, respectively. Instead of constructing a parallelogram a triangle may serve the same purpose (Fig. 56a) in which P_1 and P_2 form two sides and R the third. R is always used to designate the single force which will take the place of a system of several forces and is called the *resultant.* To find the magnitude and direction of the resultant of two forces, all that is necessary to do is to construct a triangle, as shown in Fig. 56a, with the two known forces represented parallel to their original direction and the arrow head of one placed at the butt of the other.



FIGVRE 56

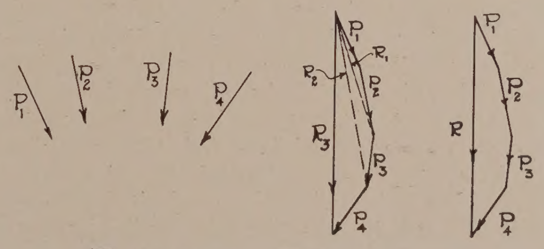
Fig. 57 represents another condition. In this case it is necessary to find not the resultant, but a force that will oppose the two known forces and set up a condition of equilibrium. E is found in the same manner as R, but it will be seen that the arrow points in an opposite direction. This force, if acting at p at the same time as P_1 and P_2 will force p to remain exactly as it is. E then sets up a condition of equilibrium and is known as the *equilibrant.* The equilibrant is equal in magnitude to the resultant, but acts in the opposite direction. In Fig. 57b the forces are shown in the same manner as in 56b, but it will be noticed that all the arrows tend to follow *around* the triangle. When this is the case there is always a condition of static equilibrium.



FIGVRE 57

So far there have only been two known forces, but it is possible to determine the magnitude and direction of the resultant or equilibrant of any number of forces provided the magnitude and direction of each one of them is known. In Fig. 58 are shown four forces P_1, P_2, P_3, and P_4 acting in the directions indicated.

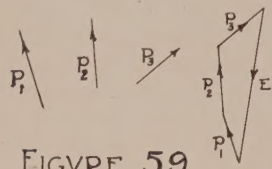
P_1 and P_2 can be drawn as shown and resolved into the resultant R_1. A second triangle made of R_1 and P_3 and R_2 can be formed, R_2 being the resultant of R_1 and P_3. A third triangle made of R_2, P_4, and R_3 will give the resultant of the two forces R_2 and P_4. From this it can be seen that R_3 is the resultant of all four forces, P_1, P_2, P_3 and P_4. Instead of drawing R_1 and R_2 in order to find the resultant of a system of forces, all that is usually drawn is the final resultant as shown in the third diagram of Fig. 58. It will be noticed that all the arrows except that of R follow around



FIGVRE 58

the diagrams. To find the equilibrant of three forces the same method is employed as shown in Fig. 59. Note the direction of the arrows.

Although this method gives the magnitude and direction of either R or E the points at which such forces are to be applied—so as to give the same results as the system of forces or to put the system into a condition of equilibrium—has not yet been determined. A further elaboration of the figure will give the required points.

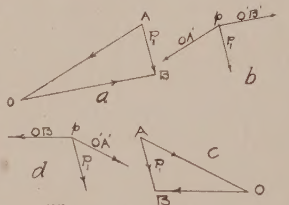


FIGVRE 59

In Fig. 56 it was shown that two forces could be resolved into a single force. By reversing the process it can be shown that a single force may be divided into two forces. P_1 in Fig. 60b acts through the point p. The magnitude of P_1 is shown by the line AB (Fig. 60a). To get the magnitude and direction of any two forces that will give the same result as P_1, take any point O, and draw OA and OB. Also draw $O'A'$ and $O'B'$ in Fig. 60b parallel to OA and OB and passing through p. These two forces will produce the same effect on p as the single force P_1. To show that O can be taken at any point, note the effect in Fig. 60 (*c* and *d*).

Fig. 61 shows a system of four forces divided up in this manner. OA, OB, OC, OD and OE are the components of P_1, P_2, P_3 and P_4, respectively. These can be transferred to A as shown starting with any point p on P_1 and drawing $O'A'$, $O'B'$, $O'C'$, etc., parallel to OA, OB, OC, etc.

It will be noticed that OA and OE act as components of R in the same manner as OA and OB act as components of P_1. At the intersection of $O'A'$ and $O'B'$, (Fig. 61a) a point is found through which R must act. In this manner the point of application of R can be determined, and all that it is necessary to know about the resultant is known—the magnitude and direction being given in *b*.

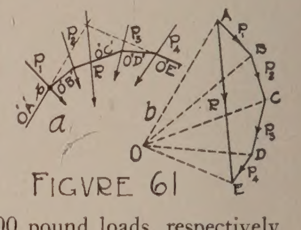


FIGVRE 60

At this point it is suggested that the architect draw several diagrams of his own, selecting any number of forces of any magnitude and find the resultants and points of application.

By using the same method, it is possible to find the direction and magnitude of two unknown parallel forces, provided we know their points of application. Given the forces P_1, P_2, P_3 and P_4, as shown in Fig. 62a, and the two points X and Y, through which it is desired to pass two forces, parallel to each other, that it will set up a condition of equilibrium. In *b* the diagram—known as the force polygon—is drawn, in which P_1, P_2, P_3 and P_4 are carefully layed out equal in magnitude (length) and parallel in direction to the respective forces in *a*. F and A are connected and the *direction* of the two parallel forces is determined. Through X and Y draw lines parallel to FA. It is now necessary to find the magnitude of these two forces. Locate O at any point and draw OA, OB, etc. Through *any* point on P_1, draw $O'A'$ and $O'B'$ and complete the diagram. It will be noticed that continuing $O'A'$ until it intersects E_1, and also continuing $O'F'$ until it intersects E_2, points on E_1 and E_2 are found that must be connected by $O'J'$ to close the diagram. By drawing OJ parallel to $O'J'$ from O to a point on FA, FA is divided into two parts. FJ gives the magnitude of E_2 and JA gives the magnitude of E_1. In this manner it is possible to determine the magnitude of two parallel forces, acting through any two points that will set a system of forces in equilibrium.

Now the obvious question is, what is the use of all this? Perhaps the answer is best found in a practical problem. Given a beam 18 feet long and carrying loads shown in Fig. 63, it is necessary to find the reactions. Lay off the polygon as indicated in (*b*) with AB parallel in direction and equal in magnitude to the 120 pound load, BC, and CD bearing the same relations to the 580 and 600 pound loads, respectively, and the sum—AD—representing the total load upon the beam.

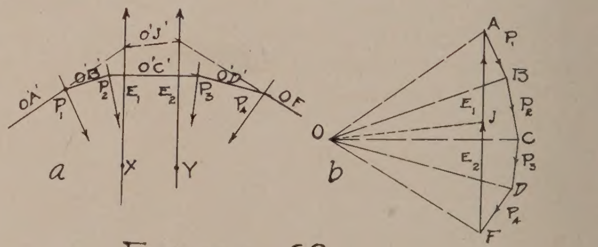


FIGVRE 61

Complete the diagram in (*a*) and it will be found that $O'A'$ intersects R_1 and $O'D'$ intersects R_2 and that these intersections may be connected by $O'F'$. Drawing OF in (*b*) parallel to $O'F'$, DA is divided into two forces, DF which is equal to R_2, and FA which is equal to R_1. Scaling off these lengths, it can be found that R_1 equals 380 pounds, and R_2 equals 920 pounds. These results can be checked as follows:

120 pounds × 5 feet = 600 foot-pounds
580 pounds × 12 feet = 6,960 foot-pounds
600 pounds × 15 feet = 9,000 foot-pounds
Totals 1,300 pounds 16,560 foot-pounds
16,560 ÷ 18 = 920
1,300 — 920 = 380

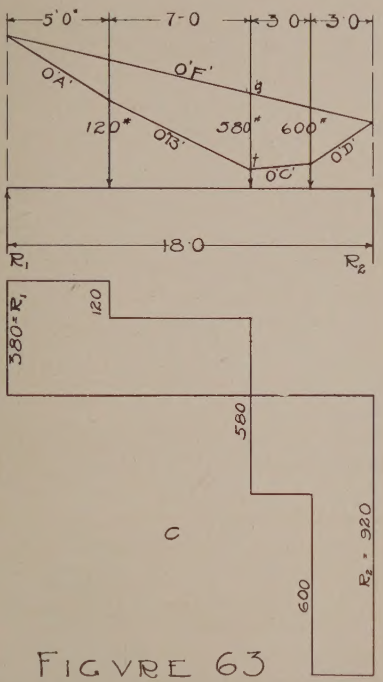
By combining (*a*) and (*b*) in diagram (*c*) the shear diagram is easily drawn. The base line is drawn in line with F (*b*). The shear at R_1 is drawn parallel and equal to FA. The loads "step" off as shown, all points being transferred from either *a* or *b*. It will be found that this is a graphical method of showing that the sum of the reactions must equal the sum of the loads. Another thing worthy of notice is that the forces AB, BC, and CD are read *downward* and DF and FA are read *upward*, and that both diagrams are closed. This means that R_1 and R_2 are upward forces and that for conditions of equilibrium the diagrams must close. The point of no shear is found under the 580-pound load and this might be told from the fact that F falls between B and C.



FIGVRE 62

So far we have been able to find the reactions and the shear diagram by means of the graphical methods. It can be shown that the bending moment at any point in the beam can also be determined. Let it be necessary to find the maximum bending moment. This occurs under the 580-pound load.

Two new lines must be drawn, a perpendicular is dropped from O to AD and the length of this line is designated as H. This is known as the *pole distance,* and O is known as the *pole.* In other words the perpendicular distance from the pole to the resultant is the pole distance. This is measured in the same units as AB or BC, or *force* units. As O can be selected at any point, the distance H can be taken as any distance, but for convenience it is usually given some even value. In this case it is equal to a distance that would scale 1,000 pounds.



FIGVRE 63

The other line is one parallel to AD and passing through the 580-pound load, cutting the diagram at f and g. As all distances in (a) are measured in feet the distance fg is found to scale 3.72 feet.

To find M under the 580 pounds all that it is necessary to do is to multiply H (in pounds) by fg (in feet) and the product, 3,720 foot-pounds, will be the maximum bending moment. In this manner, all the information necessary for the design of a beam can be found by graphical methods. Checking the value for M:

+380 pounds × 12 feet=4,560 foot-pounds
—120 pounds × 7 feet= 840 foot-pounds
M=3,720 foot-pounds

When a uniformly distributed load occurs, a more or less approximate method must be employed. The uniform load is divided into a number of small concentrated loads. Assuming that there is a uniformly distributed load of 100 pounds per foot over a beam 16 feet in length, it is necessary to divide this load into smaller units—100 pounds—and treat the problem as though there were sixteen concentrated loads, as shown in Fig. 64. The diagrams are drawn as shown, the pole distance being taken as 2,000 pounds. gf in this case measures 1.6 feet and the maximum bending moment will be 1.6×2,000=3,200 foot-pounds. This can be checked by the formula $M=\frac{1}{8}Wl$. $\frac{1}{8}\times 1{,}600\times 16=$ 3,200 foot-pounds.

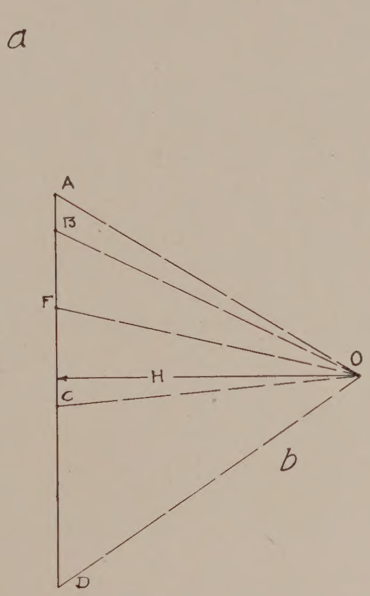
It must be remembered that not only is it possible to discover the maximum bending moment, but any moment can be found at any point in the beam by this method. At a distance 4-feet 6-inches from R_1 the distance (hj) scaled on the diagram is 1.29 feet, so the bending moment at this point is 2,580 foot pounds. To check this:

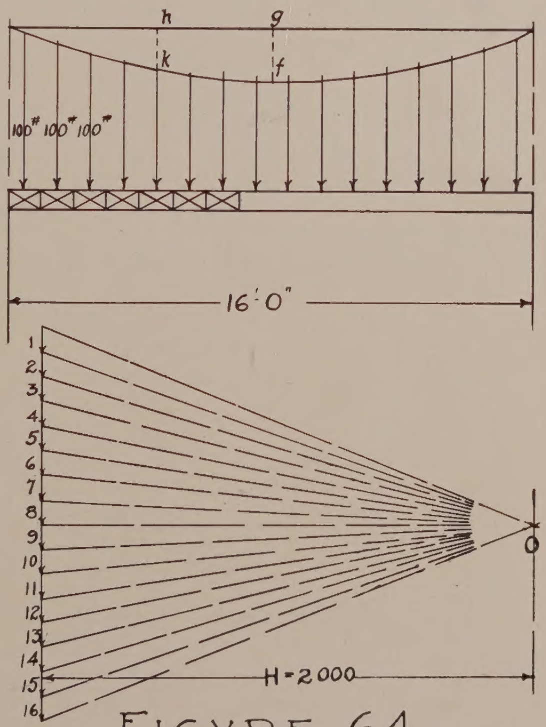
800 pounds × 4.5 feet=3,600 foot-pounds
450 pounds × 2.25 feet=1,012 foot-pounds
M=2,588 foot-pounds

These problems have been given in order to show how the action of forces can be determined, and to familiarize the architect with graphical methods. These cases are seldom used in practice, but in some instances are used as checks to locate a possible error in calculation. For this purpose graphical determination of moments are very valuable.

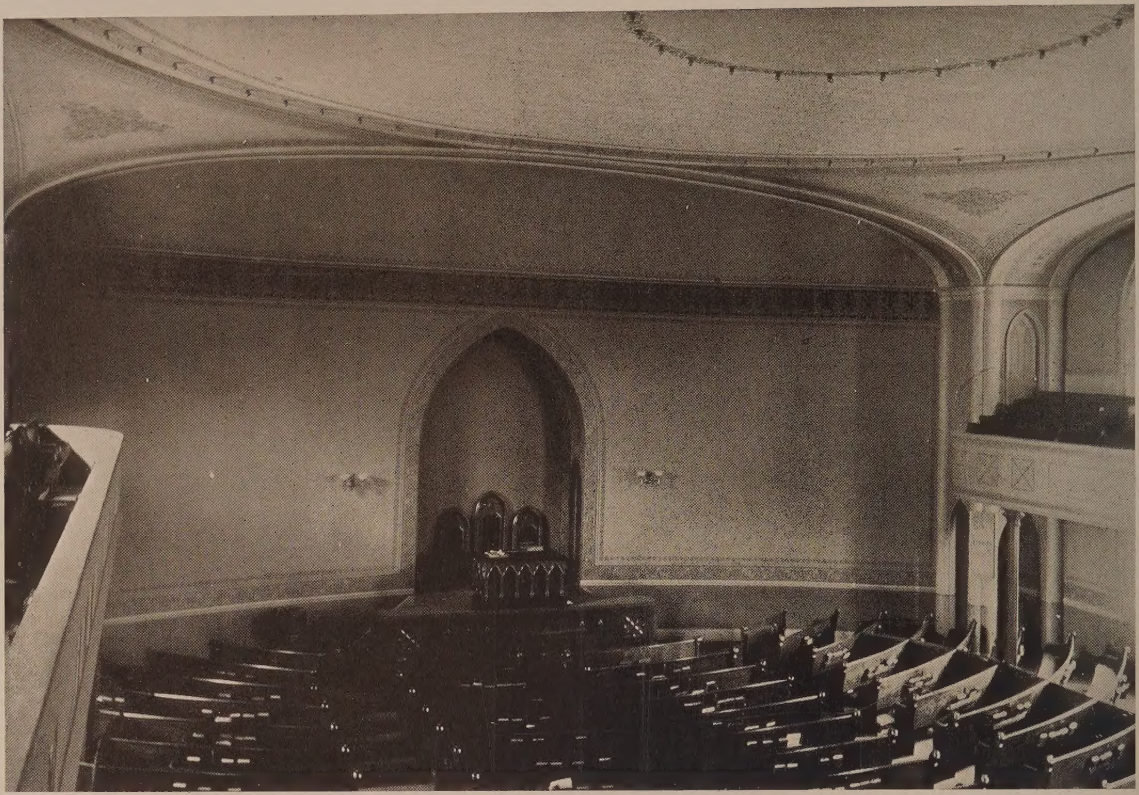
The principal use of such methods is, however, in determining the stresses in roof trusses. Trusses, having loads due to the roof construction, have to be designed to withstand the vertical pressure of such loads. There are also wind loads that are considered as coming upon the roof in a direction perpendicular to the upper chord of the truss. This makes the use of such methods as have been outlined in this article of great value, as they can be used to determine the action of forces in any direction or of any magnitude.

In the next article the design of roof trusses will be taken up, but to understand the considerations involved it will be necessary to understand at least the most important of the methods given above.





FIGVRE 64



Before Restoration.

After Restoration.

INTERIOR, FIRST PARISH CHURCH, CAMBRIDGE, MASS. Allen W. Jackson, Architect.

THE ALTERATIONS TO THE FIRST PARISH CHURCH IN CAMBRIDGE, MASS.

ALLEN W. JACKSON, ARCHITECT

THE passing of what we know as the Colonial tradition of building in the early part of the last century, gave place to one of those periods of artistic restlessness and impotence distinguished by a notable lack of esthetic enthusiasm or conviction.

It would be very convenient for the student, if it were true, that the end of the colonies as such, and the beginning of the new national existence, also marked the transition from one architectural style to another. The dates, however, do not synchronize. It was as late as 1830-40 before the Colonial style was finally pushed off the stage by the Neo-Grec and Gothic experiments which were to follow. The age was one of declining taste, and while the Neo-Grec work was saved from many vagaries by the common use among builders of rule of thumb hand books of the Five Orders, carefully drawn and freely used by them, the adherents of the Gothic revival had no such safeguards.

It was a time when the knowledge of Gothic architecture, or any architecture for the matter of that, was so circumscribed that builders saw nothing shameful in constructing arches, buttresses, and battlemented towers, with inch boards and 8-penny nails; when stone traceried windows were reproduced with a jig-saw, and massive groined ceilings in lath and plaster.

The artistic conscience was numb. From the delightfully naive work of the preceding century, the pendulum had already begun its swing toward the cimmerian darkness of the Victorian Era. The Reign of Terror was at hand.

The Meetinghouse of the first parish in Cambridge, built in 1833, is a typical example of this carpenters' Gothic. It was preceded by four other meetinghouses of the parish, the first built in 1632, and all in the close vicinity. The present building has been more or less rehabilitated on the inside at various times. Pews have been changed, walls redecorated, etc.

In the spring of 1914, it was realized that the church must of necessity, be renovated in many particulars, simply as a matter of up-keep, and it was then suggested that it might be well at the same time to try and change the interior appearance, with the idea of adding to its attractiveness.

While it was realized that the interior of a building should ordinarily match the exterior in style, it was felt that in this case it would be a mistake and defeat the very purpose of the alteration. It was the crude style and period represented by the outside, from which it was desired to escape. The decision was to make it Colonial in character, thus going back to the style of the earlier parish meetinghouses and taking again the appropriate historical place to which it was entitled among its ancient neighbors, old Tory Row around the corner, and Harvard Yard across the street.

The most objectionable features of the interior were the baldness of the vast expanse of front wall, the black walnut woodwork and the pews placed in concentric rows without a center aisle; the clumsy detail that prevailed, and the general barren and oppressive air to which the dingy green walls with their bands of parti-colored stenciling largely contributed.

The Colonial scheme with its white woodwork and cheerful colors, it was thought would do a great deal toward correcting the last objection.

For the front wall it was decided to glorify the pulpit and its surroundings, as the focus of the auditorium, and at the same time to spread out the interest and relieve the wastes on either side. As a help to this it was found that a door could advantageously be pierced in each of these walls.

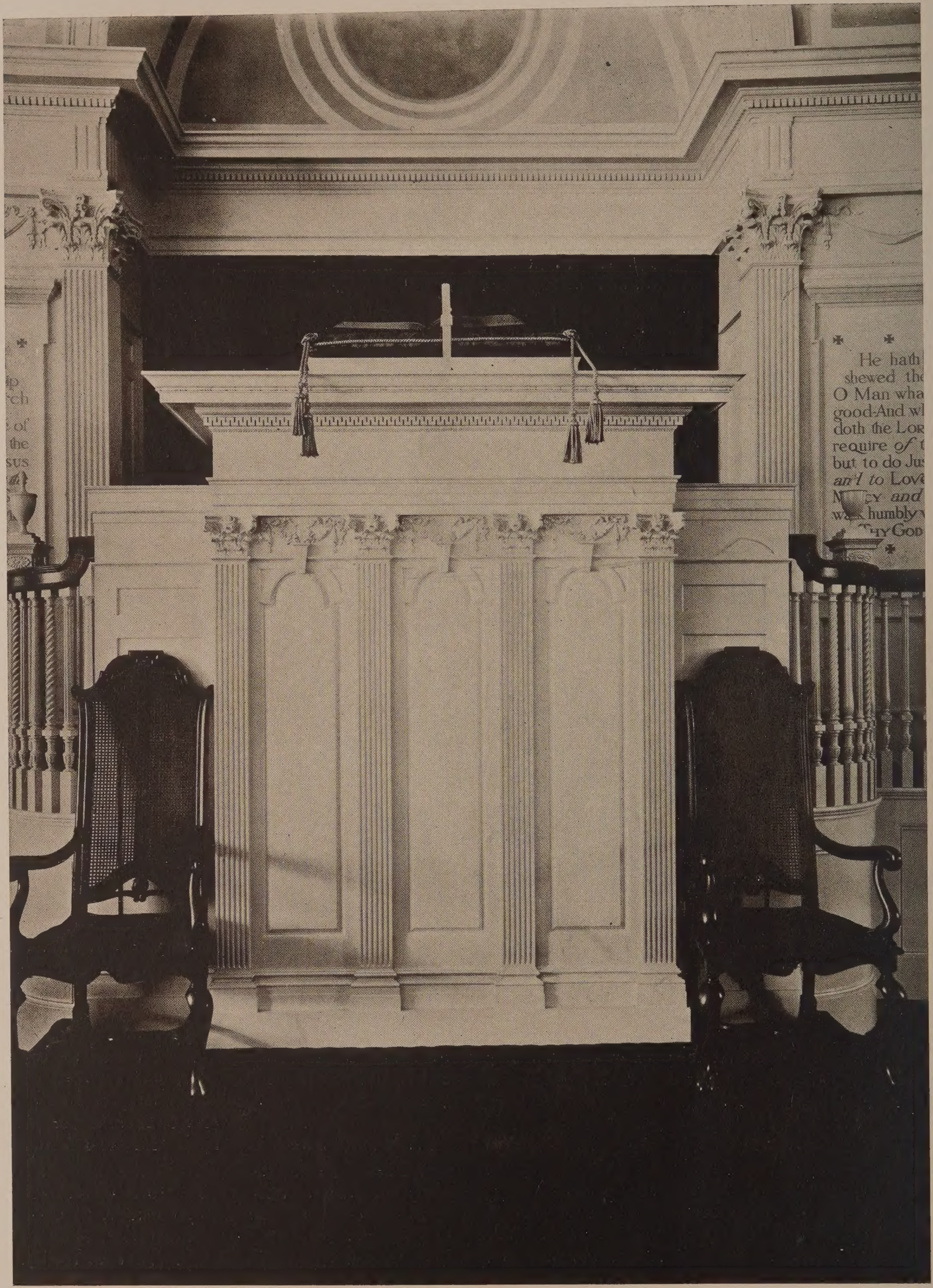
The old pointed niche was amplified into a sort of palladian motive, the doors richly treated and walls between divided into panels. The pulpit was brought forward and the platform with its rails and steps extended on either side, the whole banded together with a cornice at the height of the balcony rail. Above this cornice a heat duct, running from side to side, was not to be ignored, but was frankly accepted with only the substitution of a simpler grille, more in keeping with the spirit of the new work. The old psuedo Gothic balcony columns were replaced by fluted ones with composite cups. The solid balcony rail was stripped of its quarte foil panels and enriched with mouldings and simple scroll work, with large silver sconces over each column. It might be said here, that all fixtures and hardware throughout were done in silver.

New pews were installed, of the old square paneled end, high backed type, and laid out with a center aisle. The two center blocks parallel to the front with the seats along the side walls divided between box pews and seats parallel to these walls.

The problem of what to do with the great pointed windows filled with Gothic tracery was solved by rounding the arch on the inside and filling it with a solid fan light, thus saving the consistency of the interior, without changing the appearance of the outside.

In color, the ceiling with its pendatives was all done in cream white, the walls in biscuit color—except that everything below the cornice on the front wall is white paint. All the woodwork is white except top rails of pews, etc. which are mahogany. The carpet is dull green, the curtain behind the pulpit and the window curtains of red; the pew cushions of golden brown velour, with the Bible cushion of green brocade, with putty colored tassels shot with silver. The great Queen Anne mahogany chairs at either side of the pulpit have flat red brocade cushions with small tassels.

The vestibule was at the same time brought into harmony with the auditorium and three new rooms secured by economies of planning, a minister's study, an office for his assistant, and an extra Sunday School room. It was hoped that the money raised would be sufficient for the installation of a new organ at the same time, but this was not the case and it will have to wait. Work was begun on June 29th, and was completed, ready for the first Sunday in October, the church services having been suspended during the summer months.



PULPIT, FIRST PARISH CHURCH, CAMBRIDGE, MASS. Allen W. Jackson, Architect.

AN ARCHITECTURAL SOLUTION OF THE INTERSECTION OF AN AVENUE AND A STREET

This competition is open to all architects, engineers, students of architecture and others interested.

THREE prizes, the first $300, the second $200 and the third $100, are offered by the Municipal Art Society of New York for the best solution of the following programme.

Many of our American cities, having been laid out on the so-called "grid-iron" plan, have developed certain badly congested thoroughfares. In certain instances, where two main thoroughfares cross, it becomes necessary to periodically stop traffic in one direction in order to allow transverse traffic to cross; and as our cities continue to grow, the question of the crossing of two congested thoroughfares becomes more and more acute.

Experience in certain European cities, however, has shown that by proper planning, such congestion may be considerably lessened and at the same time the actual cost of the change may be covered by the increased value of the properties abutting on such an improvement.

The problem that is presented, therefore, is the crossing of two very important thoroughfares. To this end the competitors have the privilege of condemning any part of the four adjacent blocks, for the putting through of new streets, the changing of the positions of the present streets, the changing of the levels of the streets, or whatsoever they think most desirable both from the point of view of execution and of financing.

It must be borne in mind that property at such street crossings is of great value and that the problem is one of relieving congestion, and at the same time, endeavoring to so increase the utility of the abutting property as to enhance the total of the real estate values after the change, thus combining the construction of a great public improvement with public economy.

The avenue runs approximately north and south.

The street runs approximately east and west.

The width of the avenue is 100 feet from building line to building line.

The width of the street is 100 feet from building line to building line.

The length of the blocks on the avenue is 200 feet 10 inches from building line to building line.

The length of the blocks on the street west of the avenue is 920 feet 0 inches, and east of the avenue is 420 feet 0 inches from building line to building line.

The traffic on the avenue is approximately twice as heavy as that on the street.

The avenue is free from surface car tracks but a double line of surface cars runs along the street.

Competitors shall present a plan drawn to the scale of 1 inch equals 32 feet. and such sections and elevations as are necessary to explain the competitor's solution at the scale of 1 inch equals 16 feet. The number of drawings is limited to four. The size is not determined. The movement of traffic is to be clearly indicated.

The drawings are to be delivered to the Municipal Art Society of New York, 119 East 19th Street, between 9 and 5 o'clock on Saturday, May 22nd, 1915.

They will be judged and the awards made on Monday, May 24th, 1915 by a jury composed of the following, or their representatives:—

Mayor,

The Borough President,

The President of the Board of Aldermen,

The President of the Park Board,

The President of the Department of Taxes and Assessments.

The Police Commissioner.

The Chairman of the Public Service Commission,

The Superintendent of Buildings,

The City Engineer,

The Chairman of the Art Commission of the City of New York.

The Consultant of the Committee on the City Plan.

The President of the New York Chapter of the American Institute of Architects.

The President and Committee of the Municipal Art Society.

The drawings will be on public exhibition in the galleries of the National Arts Club, 119 East 19th Street, from Tuesday, May 25th, 1915 to Saturday, May 29th inclusive.

Drawings shall be presented in line either in ink or in pencil on white paper and washes shall be in black and white. They may be graded but without color.

All drawings shall be signed with a cipher and shall be accompanied by a sealed envelope bearing the same cipher and enclosing the name and address of the competitor.

Only one design may be presented by each competitor.

No descriptive memoire shall accompany the design.

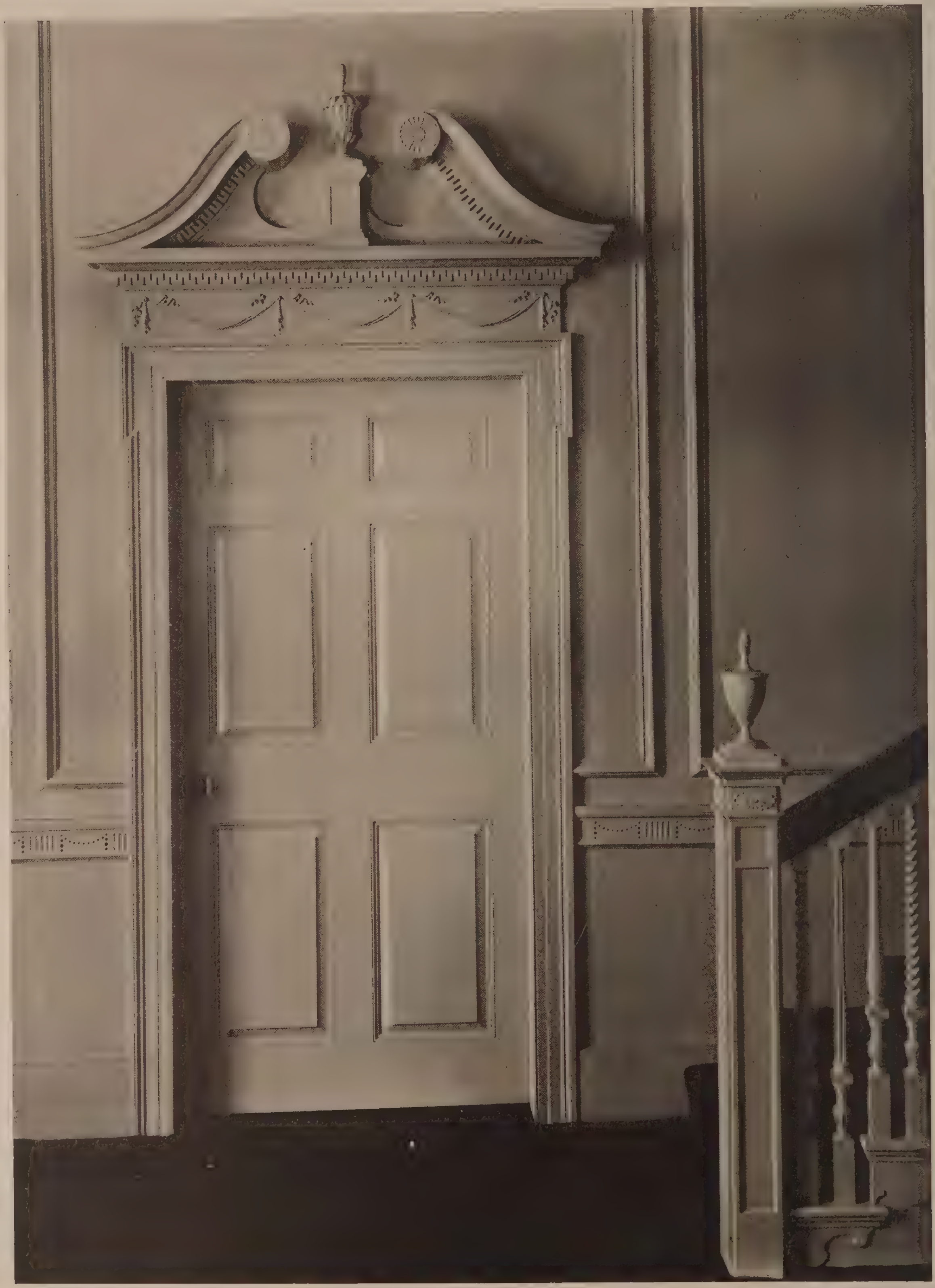
Those drawings winning prizes shall become the property of the Municipal Art Society of New York and the Committee reserves the right to photograph and publish any of the drawings submitted.

Committee on Prizes of the Municipal Art Society,
William N. Taylor, *Chairman.*
Bert Hanson
Harry Allan Jacobs
Charles R. Lamb
Everett V. Meeks

All those desiring copies of the programme and blue prints, will please apply to the Municipal Art Society of New York, 119 East 19th Street.

Competitors must call for their drawings after 9 A. M. on Monday, May 31st, 1915 or Tuesday, June 1st, 1915.

MR. WILLIAM EDGAR DUNNING, formerly a member of the firm of Dunning and Dunning, Architects and Engineers, Buffalo, New York, wishes to announce that he has opened offices at No. 15 King Block, Seneca Falls, New York, for the practice of his profession as Architect and Structural Engineer. Catalogues are requested.



DOORWAY, INTERIOR, FIRST PARISH CHURCH, CAMBRIDGE, MASS.

Allen W. Jackson, Architect.

ARCHITECTVRE

THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. XXXI APRIL, 1915 No. 4

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"ARCHITECTURE" SERIES OF MEASURED DETAILS, NO. 34

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EDITORIAL

THE DEVELOPMENT ON EAST SIXTY-THIRD ST., NEW YORK, BY MR. STERNER—THE ARCHITECT AND THE ADVERTISER—DEGREES AND LICENSES

MR. FREDERICK JUNIUS STERNER, architect, has started an ideal development of a group of old houses facing on East 63rd Street, New York. Mr. Sterner's intention here is to change the exteriors of these houses in East 63rd Street on the same principle that he followed in his development of East 19th Street. The block was treed, flagged, and general co-operation observed in keeping uniform street lines, etc.

Mr. Sterner's own house, shown in this number, indicates the treatment proposed. Mr. Sterner believes that the interior of a living place should be primarily the thing to be considered, the exterior coming about because of the interior requirements, and it is in this manner that he has treated this house for his own use. A great feature has also been made of a garden façade given to the important rooms of the house. This is a great characteristic of Mr. Sterner's work, as in practically every example he incorporates a garden feature. Even in the Greenbrier Hotel at White Sulphur Springs, W. Va., the most occupied and popular room is known as the Spring Room, and contains rockery, fountains, fish-pools, etc., a tiled floor and a brick groined ceiling. Mr. Sterner considers these treatments a very important adjunct, particularly in his city residences, and has made elaborate examples in the residences of Mr. Joseph B. Thomas, Jr., Mr. Stephen Clark, Mr. Henry Clews, Jr., and others.

THE whole publishing business has of late years become so dependent upon advertising, and the excellent character of our current periodicals in every field is so largely due to the financial support of the advertisers, that the editor believes it worth while to bring the following points to the attention of his subscribers, and to express the hope that if our advertising is of utility, the manufacturers may be informed more directly than heretofore.

He finds that an advertised device may be interesting to an architect without his immediately inquiring further about it; it may be something for which he has no present use, but the advertisement will be remembered and when an opportunity for its use occurs it will then be inquired for. Or it may be that the architect may clip the advertisement from this or other magazines of similar character, thinking the device of probable further utility, and then when the time comes around to use it he may have completely forgotten about it. The editor has been informed

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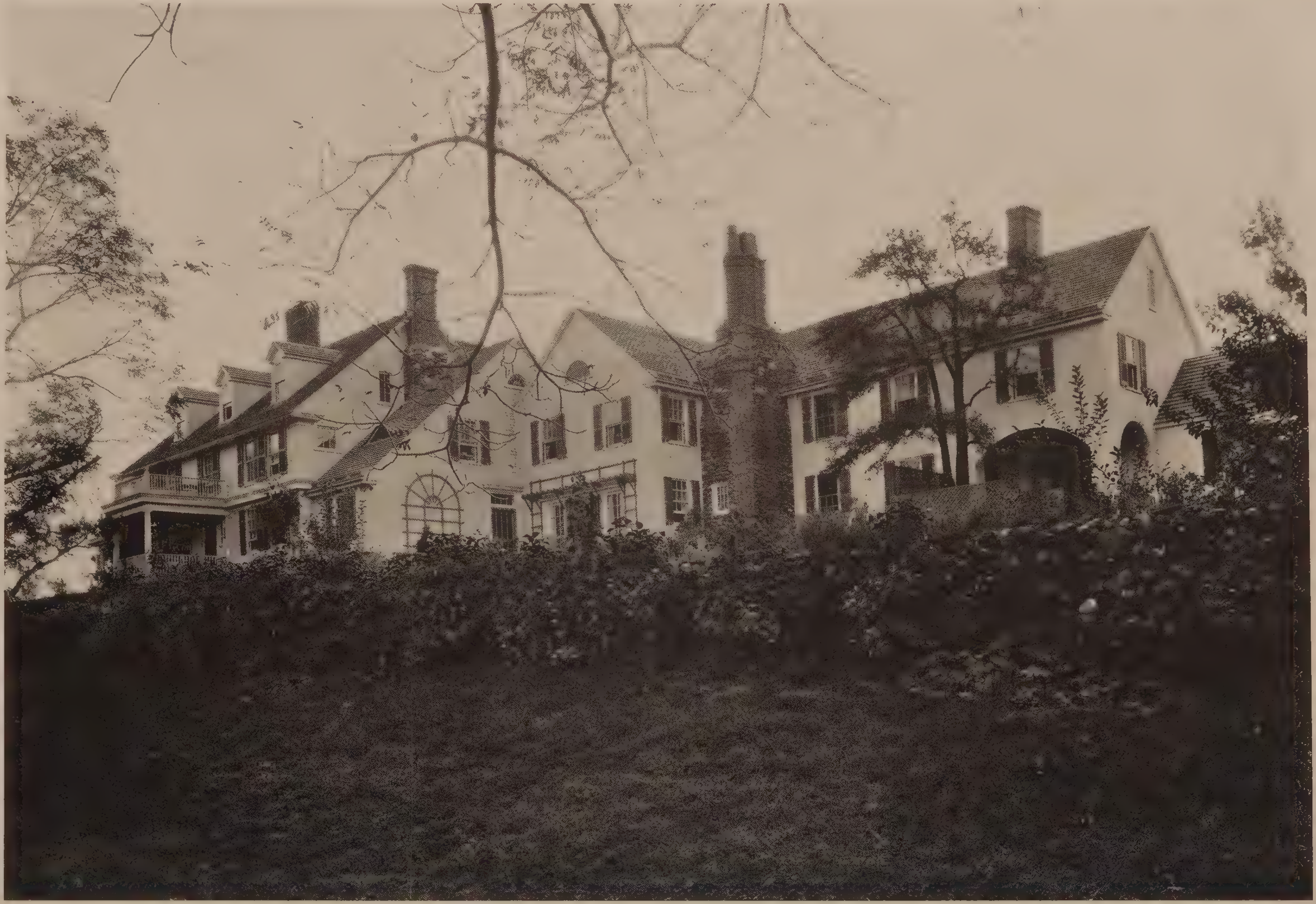

EAST FRONT, ALTERATIONS AND ADDITIONS, HOUSE, DR. FRANCIS W. MURRAY, SO. ASHFIELD, MASS.

Mellor & Meigs, Architects.

(Continued from page 117)

by the men with whom he has conversed about the matter, that practically the only advertisements which were answered immediately upon the issue of the magazine are those which just happen to fit some particular need.

For example, one architect stated that he had specified a particular type of ash life, directly from an advertisement in one issue of ARCHITECTURE, and since that time, having found the article satisfactory, he has continued to specify it; further inquiry revealed the fact that he had never communicated with the manufacturers at all, and that they had never known the source from which the architect learned of their goods. Many of the popular magazines carry a line at the bottom of the page "Please mention 'Blank's' when writing to advertisers," the idea being, of course, that the manufacturer could then tell the exact amount of utility of his advertising; but as this request is not very frequently heeded, the advertisers have to shoot in the dark when selecting their magazines. If our subscribers feel that the advertising carried in this magazine is of benefit to them, either because their acquaintanceship with products is widened, or because the financial support which the advertisers give to the magazines assists in maintaining its high quality, it would seem but fair to notify manufacturers of the manner in which subscribers' attention to their products has been called.

There is a vast amount of advertising done which produces no immediate results; it is unlikely, for example, that an architect would write to a manufacturer of metal window frames when he had nothing on the boards but country work, yet when he does have factories or mercantile buildings to be equipped with this item, he instinctively looks up and specifies a product, the trade name of which has been made familiar by advertising; and yet the manufacturer is totally unable to tell how his goods came to be specified. In the course of this inquiry the editor has found that our subscribers are unable to remember just how they happened to know the names of certain products, and while the editor has not always been able to discover that this magazine was the cause of their knowledge, he has been able to determine that this is the case in a sufficient number of instances to make him wish that the fact could be made known to the manufacturers.

If it is proven that advertising is practical and profitable to the manufacturers of a new specialty or to a business seeking recognition, the rule holds good with the old firms that need to keep their products before the architects lest they be crowded out and supplanted by the publicity of new specialties. In order to maintain the prestige established by many years of worth and service they must continue to advertise.

THE universities which give courses in architecture have been somewhat concerned about the character of the degrees which they have been giving, and there are some indications of a desire on their part to standardize and strengthen their courses, so that an architectural degree will mean that its possessor is really an architect and has a real right to be so called; but regardless of degrees the whole question of the right of an architect to so entitle himself, has become complicated by the numerous State license laws in regard to the practice of architecture.

In France the question is comparatively simple; a graduate of the School of the Beaux Arts is awarded his diploma by the French government, not as a Bachelor of Science, nor as a Bachelor of Arts, but as an "Architecte Diplomé," and in a way the whole question has been begged. French colleges do, of course, award Bachelors' degrees in both Sciences and Arts, but the architect is not given one of them. Yet on the other hand his government diploma is at once a State and scholastic notice that he is an architect of training and education and that he is fitted, so far as any school work can go, to practice his profession.

In this country the practice in the various colleges, in the various States or between the colleges and the States, is in no way co-ordinated. Some colleges award to the graduate in Architecture the degree of Bachelor of Science, others add to this so that the diploma reads "Bachelor of Science in Architecture." One school at least gives a degree of Bachelor of Architecture, and at least one other gives the graduate in architecture the degree of Bachelor of Arts, holding, apparently, that architecture is an art and not a science, although the typical course leading to the degree of Bachelor of Arts is far different from that given to the architect.

One other college has added a degree of "Graduate in Architecture," which appears to be equivalent to a Masters's degree, and not, as one would suppose, a certificate given to the man who has completed one of the special short courses in architecture, such as given in Cornell, Pennsylvania and Columbia. For these short courses certificates of proficiency are given which further complicate the situation, for they may mean much or little. They certify that their holders have satisfactorily completed certain courses; but nobody but the college authorities and the holders can guess how valuable or how extensive these courses have been.

The Society of Beaux Arts architects, which is probably doing more actual work of construction than all the architectural schools put together, also awards a certificate equivalent to a degree to those who care to work for it, adding another to the complicated series of scholastic sanctions to the profession; and all of these are outside of the State licensing system. These architects are called architects, not because they are officially recognized as such, but because they are engaged in the practice of architecture in some form or another.

The system may need no change, and perhaps in any case the standardization of college degrees would be no way to go about making such a change, for many of our ablest architects are graduates of offices, and have never been inside a university except as a visitor, but it certainly would seem desirable for all the colleges to adopt the same degree and to give strong enough courses leading to this degree to have them accepted by the State Licensing Boards as sufficient qualification for the practice of architecture.

What, in New York, is colloquially known as the Board of Regents, (although its official title is, we believe, the University of the State of New York) conducts examinations which alone admit to practice, men in three of the learned professions, law, medicine and education, and in this State it would seem that the problem was fairly simple if a standard degree were adopted by the colleges. There is as yet no licensing act for architects in New York, and the desirability of such an act has been strongly questioned, but were such an act to be enacted, the Board of Regents would probably become the licensing body and they might be empowered to give with the license some form of diploma equivalent to a Bachelor's degree.

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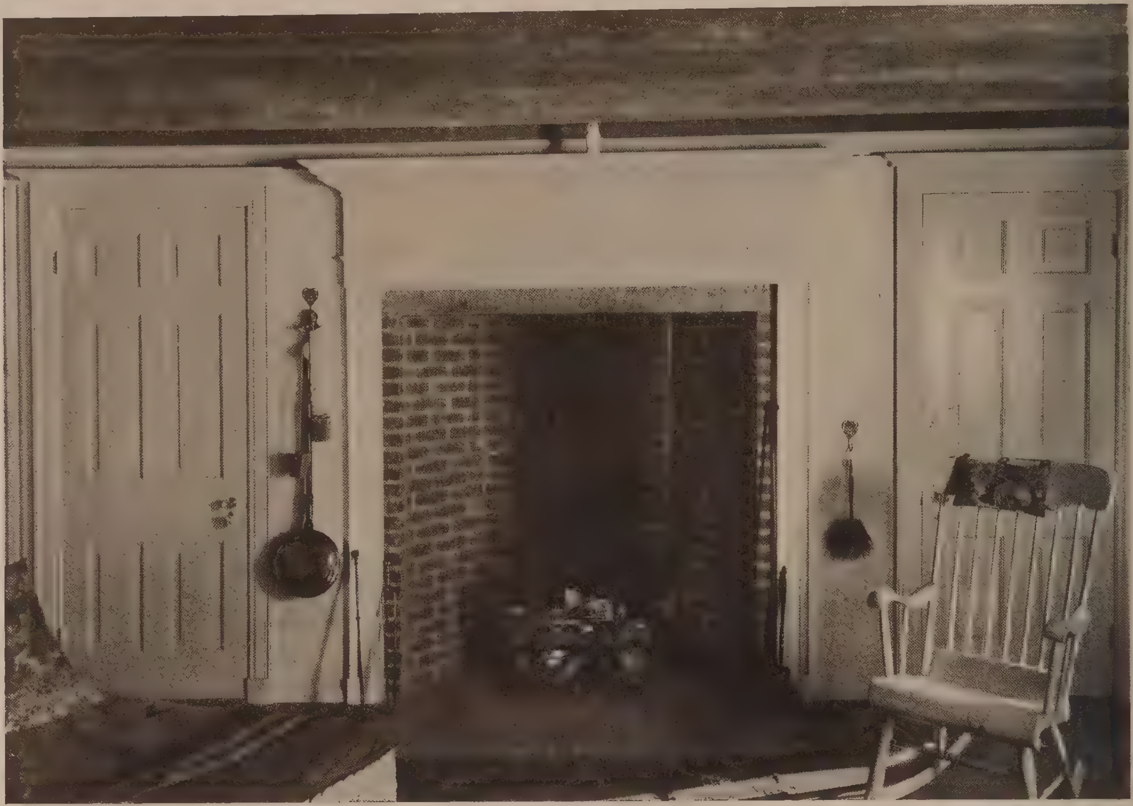
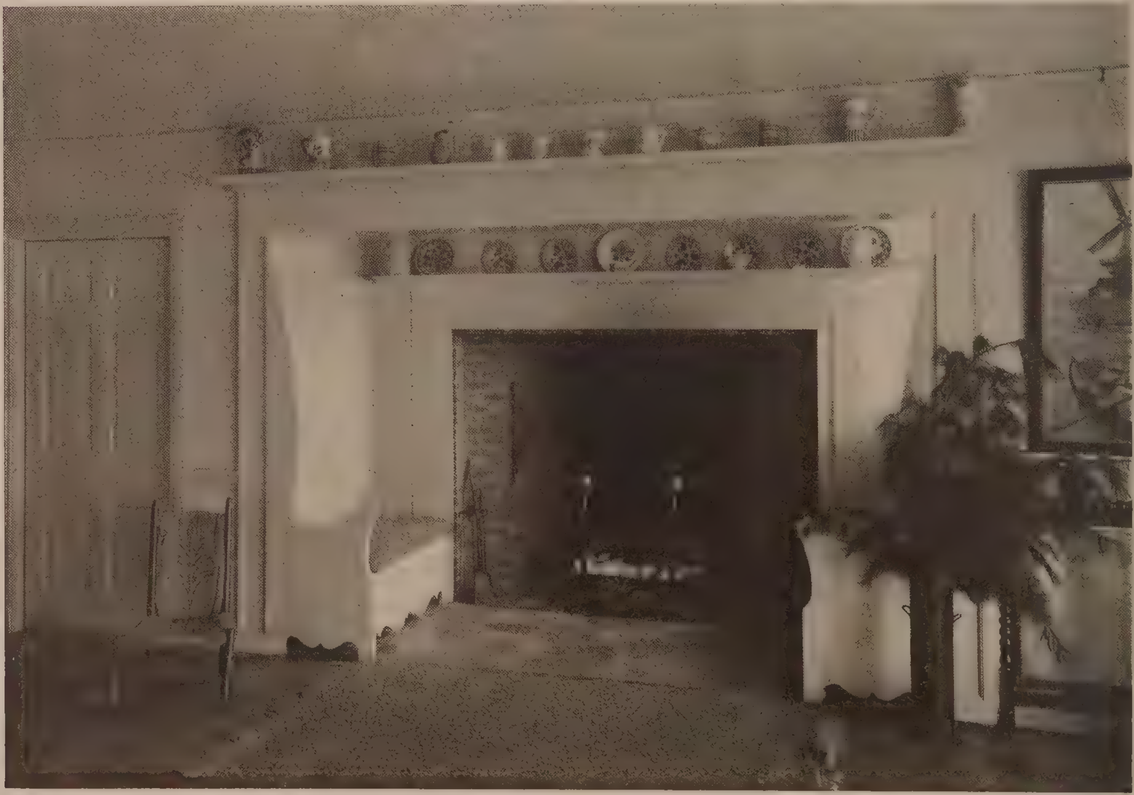


Fireplace in Music Room.



Fireplace Alcove in Dining Room.

HOUSE, DR. FRANCIS W. MURRAY, SO. ASHFIELD, MASS. Mellor & Meigs, Architects.

(Continued from page 119)

The whole system of State licenses for architects is open to one objection, which does not apply to the other learned professions; an architect's activities are not limited to any particular geographical location; a doctor practices, as a rule, only in the immediate vicinity of his home, and the procedure in law varies so greatly in different States, that a lawyer can only practice before those courts with which he is familiar; but an architect may design buildings all over the country without finding that the size of feet and inches or the strength of materials differs from Maine to California, and a man practicing in a number of various States under the present system of State licensing would accumulate a collection of parchments more interesting than useful. If there is to be a licensing act at all it should be Federal and not local, permanent and not annual, and the degree in architecture, no matter how it may be called, given by a school of recognized standing should be considered as prima facie evidence of a man's qualifications, with the requirement of one or two years' work as a draughtsman.

One other feature of the State license that is objectionable is that the fee is annual; the State license in medicine or law is granted for life and is a certificate of proficiency; but the annual license becomes a mere tax on practicing architects, just as the dog and the saloon keeper, objects to be tolerated rather than encouraged, pay the State for the mere right to exist another year. In defense of the annual fee for the State license, it has been said that the entire amount paid in is used to prosecute violations of the act, and thus to protect the profession; but no such annual contribution is required from the doctor to protect the public from mal-practice; and with architecture as in medicine it is the public, not the practitioner, who requires protection. As well might the State set apart the entire fund collected from liquor licenses to punish infraction of the liquor law, if there is any logic in such a statement.

The profession of architecture is annually, almost daily, attaining a position of greater importance in the public eye, and architects are being looked to to perform many functions for which they are specially qualified, although these functions may not be of design alone, and as the profession advances in this direction the men in it perceive more and more the desirability of some standardized form of determining their abilities, some official recognition of their attainments, and some way to debar the inefficient and incapable from using the same title and enjoying the same confidence which is meet to the educated and the experienced.

STANDARD GENERAL CONDITIONS FOR A SPECIFICATION ON ORNAMENTAL IRON WORK

Proposed by one of our leading architects and presented to the profession at the annual dinner of the N. Y. Architectural Sketch Club Alumni held at the Salamagundi Club, Feb. 2, 1915.

GENERAL:

The drawings and specifications are to be taken together. Anything shown on the drawings and not mentioned in the specifications and anything mentioned in the specifications and not shown on the drawings, shall be considered as both shown and specified; and anything wanted by the Architect or his friends or anybody else (except the Iron Contractor) shall be considered as shown, specified, implied and required and shall be provided by the Iron Contractor without expense to anybody but himself.

Any material furnished or work done without expense to the Iron Contractor shall be taken down and done over again until the expense is satisfactory to the Architect.

PROPOSALS:

All proposals shall be accompanied by a certified check made payable to the Architect, in the sum of twenty-five per cent. of the amount of the proposal; the check may be returned upon completion of the work.

Proposals shall be for everything shown, described or implied by the drawings and specifications, verbally or mentally by the Architect, or his assistants, all drawings used for estimating purposes must be returned with the proposal and the Architect reserves the right to make such modifications and changes as he may deem proper for the finishing of the work (and the Iron Contractor), except before or after the contract is closed, and no claim for extra compensation shall be made therefor. If, however, in the Architect's judgment, any changes are made that the Architect says cost less or the contractor says cost more, the difference shall be deducted from the amount of the contract price by the Architect, whose decision thereon shall be final.

ARCHITECT:

The term "Architect" herein appearing shall be understood to mean the Architect or any uncivil or insanitary engineer, draftsman, representative, or anybody else that he foolishly but courteously employs to assist in making rules and thinking of work to be done by the Iron Contractor.

CONTRACTOR:

The term "Contractor" herein appearing, shall mean in every instance the Iron Contractor, his foremen, workmen, or any employee, friend, assignee or members of his family, to whom orders from the Architect may be given. The Iron Contractor shall in every instance be responsible for the execution of such orders, whether delivered in writing or verbally or by absent treatment, to himself personally, or to any of the aforesaid members of his organization, the same as though told to him.

DRAWINGS:

The drawings are to be considered diagramatic and are to be followed only where space conditions make it possible to avoid so doing.

Coincidence between the drawings and executed work shall not be considered a claim for extra compensation. The Architect is not required to recognize coincidence. Coincidence between the drawings and specifications shall be immediately referred to the Architect.

Anything that is right on the drawings is to be considered right; anything that is wrong on the drawings shall be discovered by the Iron Contractor and shall be made right without any talk or discussion on the part of the Iron Contractor and without referring it to the owner and without showing on the bills.

Anything that is forgotten or omitted from the drawings and specifications, but which is necessary and required for the comfort, convenience and satisfaction of the owner

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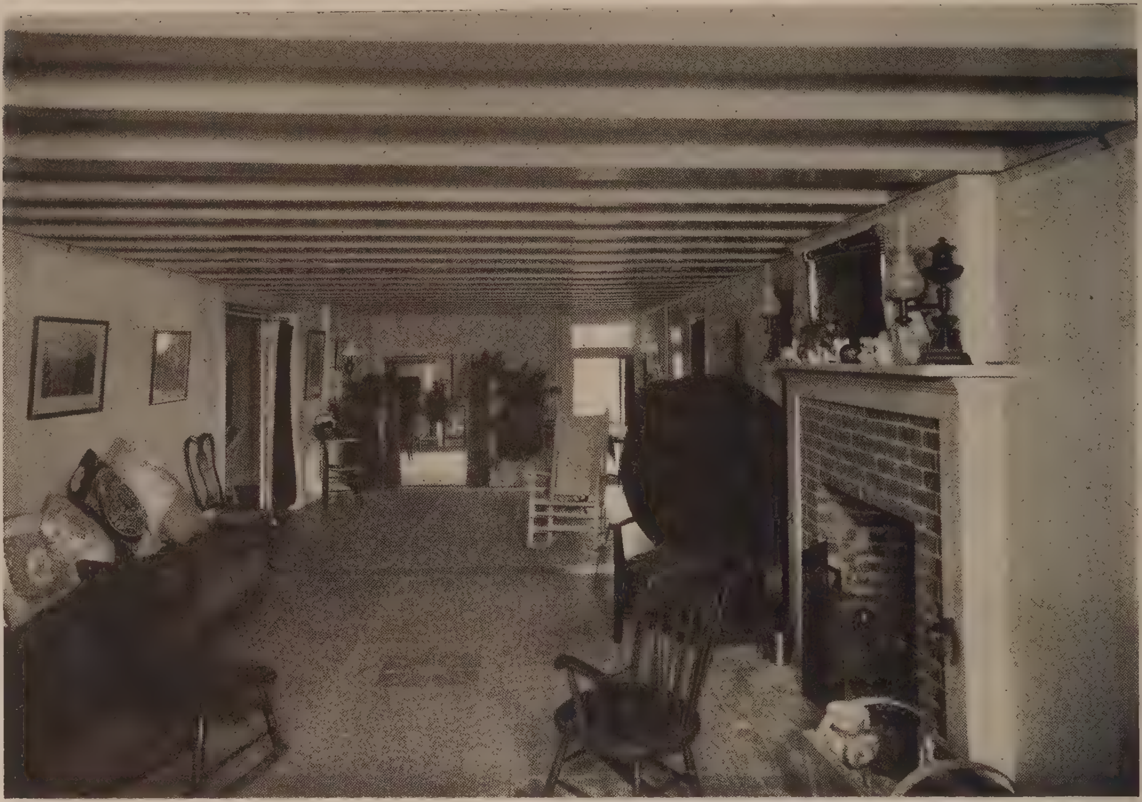
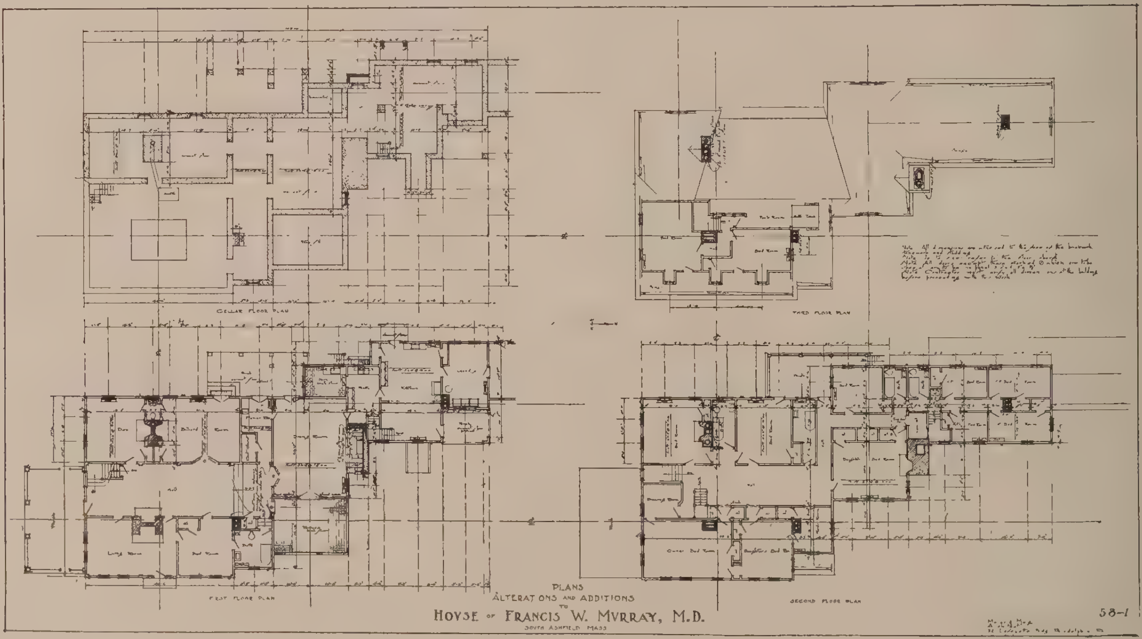


Hall.



HALL AND PLANS, HOUSE, DR. FRANCIS W. MURRAY, SO. ASHFIELD, MASS. Mellor & Meigs, Architects.

(Continued from page 121)

and Architect, shall be provided by the Iron Contractor to the satisfaction of everybody (except the Iron Contractor) and in full accord with the intent and meaning of the drawings and specifications and the Architect, without extra cost to anybody but the Iron Contractor.

Drawings are the property of the Architect and must be returned to him whenever required. The contract drawings, however, being diagramatic, will be fully amplified by the details which will be furnished as soon as the Architect can get around to it. If the details, when completed, are found to coincide with the work, they shall be returned at once to the Architect for correction.

No claim for extra time will be considered that is based on delay in receiving details.

RULES AND REGULATIONS:

The work throughout shall comply with all rules, regulations, caprices and whims of all city, county, state, national and international departments, bureaus and officials having, or not having jurisdiction.

Tammany Hall shall be considered an official department.

MATERIAL:

All material shall be the best of their several kinds; the Iron Contractor is expected to know and provide the best, irrespective of what is specified in detail.

The Architect reserves the right to change his mind about what is best.

Any changes necessary to make the work and material fit to the mind of the Architect, shall be made by the Iron Contractor without extra cost.

PERMITS:

The Iron Contractor shall obtain all permits, pay all fees, annual dues, assessments, subscriptions to mask balls, luncheons, dinners, organizations, outings and hat checks.

GUARANTEE:

The Iron Contractor shall guarantee, and hereby does guarantee that he will keep in complete working order anything that the Architect asks him to attend to, so long as there is more work in sight in the Architect's office.

ARBITRATION:

In the case of any dispute arising as to the nature, character or extent of work shown, specified, implied, or thought of, the matter will be decided by referendum and recall, after which the decision may be set aside and reversed by the Architect, whose decision is hereby admitted to be just and impartial, or by his designer-in-chief, his head draftsman, office boy, or any other representative.

PAYMENTS:

Payments, if any, shall be made on the Architect's certificate. Architect's certificates shall not be considered negotiable, nor are they legal tender. When once issued, the Architect assumes no further responsibility for their further usefulness.

Partial payment, if any, may be made as the work progresses, in the amount of 85 per cent. of the work done as judged by the Architect. In no case shall the Architect's judgment cover more than enough to pay the ironworkers and helpers every Saturday night. The material men must take the customary chances, and if, in the judgment of the Architect, any payment is excessive, the Iron Contractor shall return the difference to the Architect.

Final payment, if any, shall be made when everybody is satisfied except the Iron Contractor.

Any evidence of satisfaction on the part of the Iron Contractor shall be considered a just cause for withholding payments.

The Iron Contractor shall accept and hereby does accept all the conditions hereinbefore appearing, for himself, his ancestors and progenitors, his family, heirs, executors, his friends, assignees and acquaintances.

"AS SPECIFIED"

BY C. MATLACK PRICE

A Detail of Architectural Specialization.

TO say that the present age is one of specialization is to invite the charge of being trite. To inquire or state in what manner special requirements are being met today is not only far from being trite, but is a distinctly profitable undertaking—especially to the architect.

It is the architect with whom we are primarily concerned, and with the problems which specialization has gradually forced upon him. Today his task is far more complex than merely "to build beautifully"—in addition to this he is held responsible for heating, ventilating, plumbing, electric work, hardware, elevators, and innumerable other details of the modern building, and among these, the selection, specification and successful execution of painting and other wood finishes.

Since no one man, or even a considerable organization, could reasonably be supposed to compete, in special knowledge of so wide a variety of subjects, with individual specialists, trained and intimately versed in technical questions, manufacturers recognized this era of specialization by the establishment and development of the service bureau, maintained in connection with their products.

Such service bureaus have varied not only in their methods of rendering service, but also in the efficiency with which they have been operated—and today "efficiency" must be the watchword.

In method, service has been offered directly to the consumer, or through dealers, or through architects, or has been developed in such manner that it is of highest value to all three.

"Service" as intended by those manufacturers who offer it, is to be understood in its broadest sense to include information or demonstration, as well as suggestions (if required), and estimates upon an entire project or upon any part of it. That such service, rendered by practical specialists is of very direct value to architects is obvious, and of appreciation proven by the number who avail themselves of the benefits of manufacturers' enlightened policies which include the service idea.

By way of illustrating the workings of an up-to-date service department, as well as its manifold functions, reference is made here to the New York representation of the Bridgeport Wood Finishing Company, which, while possessing certain unique features in its own field, is typical of the high development which the service idea has reached.

The finishing of wood, even in its simplest forms, is a very complex matter, and one in which the best intentions of the architect may (and often have) gone astray. First there is the selection of the wood, then the selection of its finish, then the assurance (if possible) that this will be properly executed—and governing all, there must be the knowledge that wood, finish and execution are properly chosen, and chosen with a thorough understanding of the possibilities or the limitations arising in connection with these three considerations. Rare and expensive woods may be ruined by the use of the wrong finish, or even by the right finish wrongly applied—and common, inexpensive woods may be glorified by the application of a certain finish in a certain manner.

These are typical (though few) of the technical problems which are expertly handled by the service staff—and there are yet other considerations. Assuming that the architect has a very clear, or even a very technical knowledge of his wood, its finish and the right method to employ for securing a certain result. What of his client, to whom all woods may seem nearly alike, and the art and science of paint something akin to alchemy?

The architect, no matter how extensive his office "museum" of samples, cannot possibly have on hand examples of every sort of finish on every sort of wood. Nor can he satisfactorily describe the exact appearance of the wood which he intends to use, finished in the manner he intends it to be finished. And the client would like to see it, and, very usually, feels that probably there may be some alternative which he would prefer, if he could see actual comparisons.

Even assuming, that the architect is very certain of his ground, and that the client is in accord with his proposals—what of the artisan—of the man who is going to do the actual painting or staining? There are as many fine points in the application of paints and stains as there are in delicate cooking recipes, and as many chances of failing in the desired result, if directions are not accurately and correctly given.

These being the problems, broadly speaking, the service department undertakes to handle them with maximum efficiency. First, there is detailed expert knowledge of the entire subject, and this is employed in writing accurate and careful specifications, making clear every detail in connection with applying under conditions assuming the exercise of reasonable care. Expert knowledge of wood finishing is further offered in the form of suggestion or advice as may be required.

Realizing that this service would be incomplete without actual exhibit, the department maintains in the form of a well-arranged permanent display, a range of specimen woods and finishes, as nearly complete as is possible of attainment. In order to avoid any danger of "standardization," or of falling into a certain set of rules, the exhibit is constantly freshened by additions, showing the newest ideas and discoveries in painting and staining. It is thus possible for either architect or client—and preferably both in conjunction—to study their wood finish problems at first hand, and having duly made their choices, to enjoy the certainty that the finished work will be to their entire satisfaction.

By way of further guarding against "standardization," and as an additional special service, any finish is applied (under ordinary working conditions) to pieces of the actual woods that are to be used in a given building, thus eliminating any possible danger of failure due to unforseen "special conditions." There are a great many different kinds of oaks, and different kinds of pines, and, as a further detail, local variations in the same kind. The specifications, however, guard against failures into which even a competent artisan might fall because the special woods, as well as those in the permanent exhibit, are all finished by average workmen under average working conditions, and specifications written accordingly.

Thus the service department of the modern manufacturer is not a mere bid for popularity—it is rapidly and deservedly becoming an indispensable institution—helping him to solve his own problems, and helping him by educating his clients and directing the artisans who are to do his work.

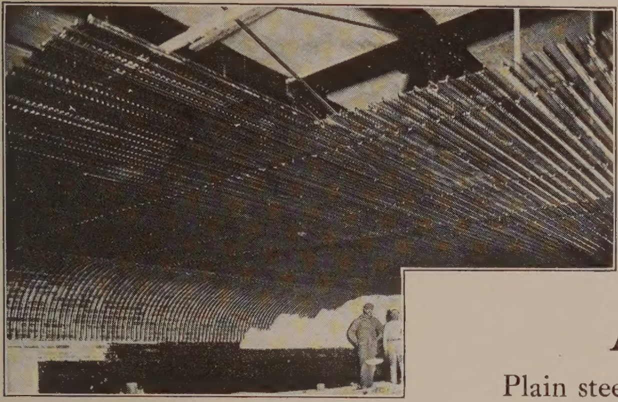
WHEN the great readjustment of architectural and building affairs is accomplished and business assumes its normal activity, we will begin to realize and appreciate the benefits of the recent lull. The new era will be marked by higher standards and improved methods applied to manufacture and the execution of architects' designs. Likewise, there will be noticeable a larger consumption of materials drawn from our own natural resources which are destined to replace, permanently, raw materials that have hitherto been imported from European countries.

Our manufactured products for building purposes will be in reality American goods and we have faith to believe that they can and will be made as good and reliable as any foreign importations.

When the wheels of progress show a tendency to turn backward, thinking men direct their attention and energies towards the improvement of business systems and it oftimes happens that the interposition of Providence actually provides these thinking spells for our ultimate good. An architect expressed the thought to the writer in this way: "Architectural and building afflictions are about the same as the physical ills that afflict the human body. A man goes on under high tension disregarding little pains and aches, forcing the human machine to the breaking point, until Nature rebels and nothing short of complete rest and careful treatment will make the body respond. In other words, he takes an enforced vacation and comes back in better condition of brain and body and capable of better effort.

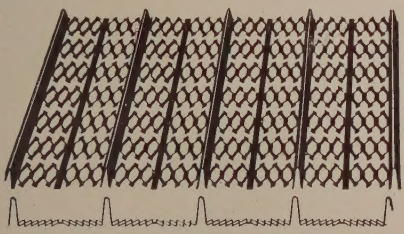
But along comes the upheaval of the old systems; men have sprung up with real ideas, ordinary people are pondering over the difference between faking and creating, and extraordinary people are endeavoring to satisfy the demand for architecture which shall speak for what the word really means, "The art of building."

A REPORT prepared by the Illinois Chapter of the American Institute of Architects upon the problem of estimating by contractors under the present methods states that members of the chapter investigated the office work of five representative contractors. They found that the average number of contracts estimated by each contractor in one year was twenty-two, the average number of jobs which he obtained from these estimates was ten. The average value of the time spent by the office force of each firm on each estimate, including additions by sub-contractors and material men, was $503. The report points out that the cost of six bids on a building costing between $100,000 and $150,000 ran to over $3,000, that is, between 2 and 3 per cent. of the whole cost of the work. Perhaps in no other business is so much unproductive work done at so high a cost.



CORR-MESH CEILING
Marloca Theatre, Buffalo, N. Y.

CORR-MESH sheets form a stiff reinforcement for the plaster. Note the curved sheets near the wall. These are formed in our shops ready to erect at the job.



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Stiff-ribbed, one-piece expanded metal. The ribs, ¾ inch high, are spaced every 3¼ inches apart, giving great strength to the reinforcement and doing away with extra studding. The metal between the ribs is expanded into a diamond mesh.

Easily and quickly put up and plastered. Ideal for walls and roofs of industrial buildings, whether constructed with steel, reinforced concrete or wooden frames.

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Plain steel costs just so much per ton.

But change it into a product which makes reinforced construction easier, cheaper, and better, and you get a plus value.

The amount of this plus value depends upon the inventive and engineering skill put into the development of the product.

CORR-MESH, for instance, is plain steel with a plus value. It is a one-piece product with a scientific combination of expansion of metal, with stiff ribs so designed and at such intervals as to give the necessary reinforcement at the point of stress, plus the supporting qualities of ordinary expanded metal.

CORR-MESH takes the place of stud and lath in partitions, eliminates centering in roofs, is used as lath and furring in suspended ceilings, and is one of the best reinforcements possible to use for solid stucco wall construction.

For whatever purpose used, CORR-MESH saves time and labor and makes a better job.

The plus value of CORR-MESH is not there by chance. It was put there by engineers who have studied concrete construction since the days of its infancy, and the product was created with a thorough understanding of the situation to be met.

See Our Complete Catalogue in 1914 Sweet's, pages 238-246-D

CORRUGATED BAR COMPANY

401 Mutual Life Building, Buffalo, N. Y.

Boston New York Syracuse Chicago Philadelphia St. Louis

THE "WINSLOW" STEEL WINDOW

THE steel window has reached the very highest state of perfection in design, workmanship and general utility, in the product of the Hecla-Winslow Co., Inc., known as "The Winslow Window."

This window is made of solid rolled steel from rolls especially designed to give shapes that are particularly neat in appearance both from inside and outside, that secure absolutely weathertight connections, and bring both sash in one plane, thus doing away with the objectionable overhang and its shadow at the meeting rail.

The sections used in the frames are also from special rolls with a view to giving a perfect weather tight connection to the walls of the building. The frames are tenoned together and the sash is welded at all corners and fitted into the frames at the factory. The windows are set in place complete, excepting the glass, which is inserted later from the inside and held in place by a neatly designed steel glass stop with bronze screws. Special hardware is provided and attached after glazing is completed.

The action of this window differs from all other designs, in that the sash being balanced, one against the other, and moving on the balance arm from the center of the frame, the pulling in of the lower sash at the top correspondingly throws out the upper sash at the bottom. This movement is continued until, owing to the rotary motion of the balance arms, the lower sash is raised and the upper sash lowered, and they finally come together at the center of the opening, leaving the lower quarter and upper quarter of the window open, and both sash lying close against each other at the center.

The Winslow Window has a combination of unique features, which have never before been presented, and which are highly appreciated by architects, owners and tenants. It is made of solid steel throughout, and is durable, weatherproof and fireproof. It is architecturally attractive and is adaptable to any type or design of building. The steel sash, while giving greater strength, occupies less space than other forms and allows 15% to 25% greater light area to the opening.

The rigidity of this form of sash, together with the roller bearings and bronze fittings, gives a window that can be opened or closed with the slightest effort, regardless of its size. It does not swell or shrink and the principle of construction leaves no chance for it to bind or stick, although it is held in place whether closed fully, or partially opened.

The principle of this construction which brings the sash in perfect contact with the frame when closed and locked is the only one that allows for an absolutely weathertight metal window, without weatherstripping or other method of sealing. It does away with grooves in which the ordinary sash slides and which must of necessity have sufficient play to operate easily and without which it will not operate, while with sufficient play it cannot be fully weather-tight.

The balance arms disappear in closing the window, but are in full sight when the window is open, allowing ready access should any repairs ever be necessary. There are no concealed weights, chains or other mechanism which necessitates the tearing away of window trim in case of the slightest repairs.

From the standpoint of the tenant or occupant of any room, the Winslow Window is especially attractive as a "ventilating window," because by pulling the lower sash in at top and thus throwing the upper sash out at bottom, an opening of about six inches is possible at the center or meeting rail before the sash is released from the grooves at top or bottom of the window, with the result that a flood of fresh air, in a space of six inches by full width of the window, comes freely into the room, blown towards the ceiling and at the same time no direct draft of air on the occupant of the room is possible.

Tenants appreciate this feature so fully that a great many letters have been received by the manufacturers, congratulating them on furnishing a window that gives more light and plenty of fresh air without jeopardizing the health of the man at the desk or inconveniencing him by blowing his papers about the room.

Ordinary awnings are a great expense, an eyesore, very inconvenient, and a constant menace. A method of operating an awning from inside the room has long been sought. The Winslow Window solves the question of awnings completely. Fitted to the sash on the inside are brackets for holding shade rollers, also catch rollers for carrying the shade cords. These are arranged so as to make the shade lie close to the glass and come within the molding on the sash and be thus protected from wind and weather. They are held in tension by the cords, and whether the window is closed or open give the most complete and perfect awning, always neat and clean, no expense or repairs, shielded from wind and weather, and operated by the slight pulling or releasing of a cord from inside the room.

The Winslow Window has been manufactured for less than two years and is already installed in a number of the highest grade buildings in the country, and is endorsed by architects, engineers, office managers, owners and tenants wherever seen. —A—

UNIVERSITY OF LIVERPOOL
FACULTY OF ARTS
CHAIR OF CIVIC DESIGN

The Council invite applications for this Chair, which is associated with the School of Architecture. Salary £400. Residence required from 1 October to 31 March. Professional practice allowed on conditions. Duties to begin 1 October, 1915. Applications, together with the names of three persons to whom reference may be made, and twelve copies of not more than six testimonials, should be forwarded to the undersigned on or before 10 May, 1915. Further particulars regarding conditions and duties may be had on application.

EDWARD CAREY,
Registrar.

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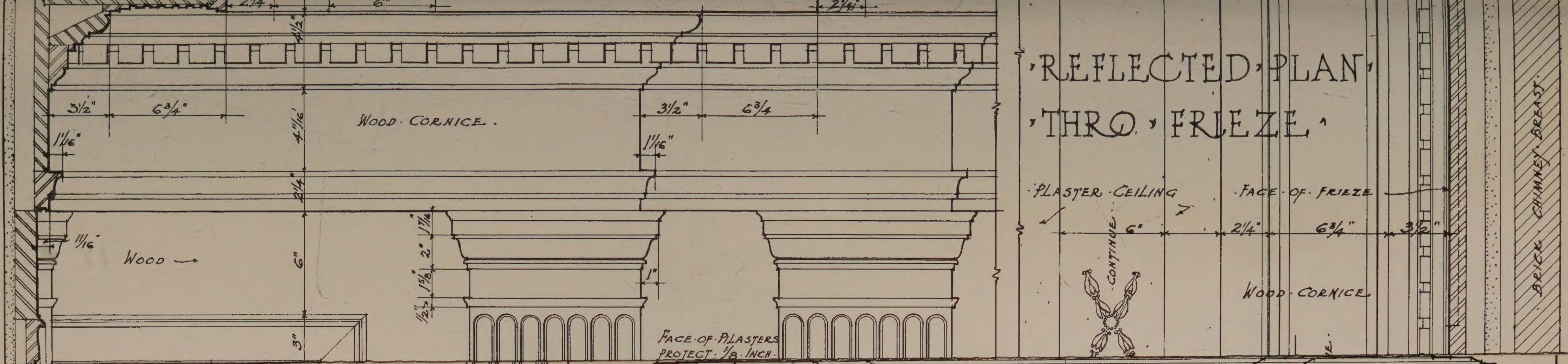
3. A special two-year course for qualified draftsmen with options in design or construction; leading to a professional certificate.
4. Summer school instruction in architectural subjects.

For circular giving complete information regarding the courses, requirements of admission, advanced standing, summer school, fellowships and scholarships, etc., address DEAN OF THE TOWNE SCIENTIFIC SCHOOL, University of Pennsylvania, Philadelphia, Pa.



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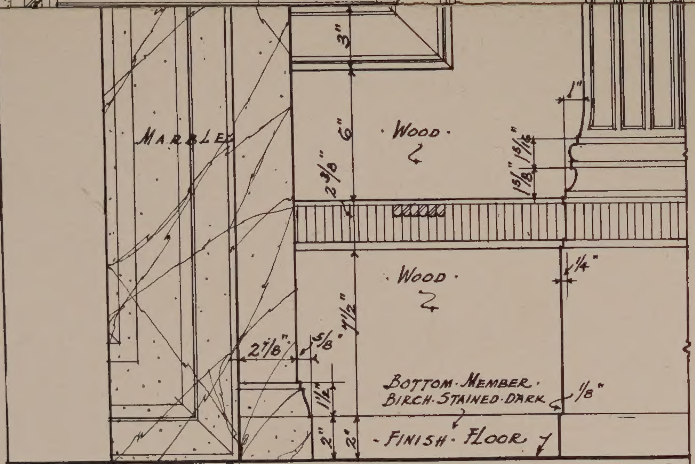

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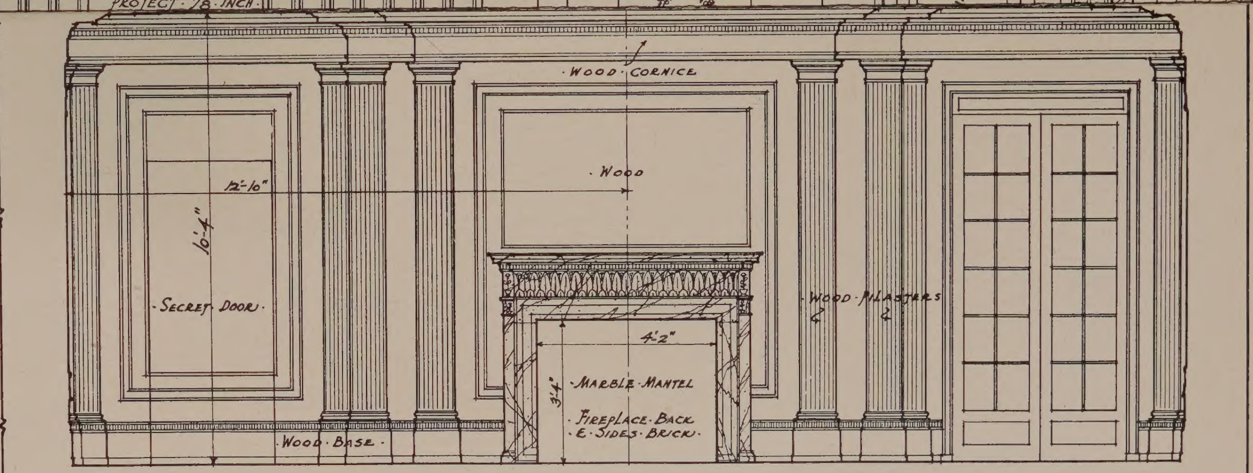

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